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# Biz of Acq -- Examining the Worth of Information

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**UCITA Revisited**
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to make these contracts enforceable; but opponents say the law will still allow vendors to institute restrictive contract terms. Software manufacturers claim that these restrictions ensure that consumers do not freely distribute the products. Scholars and librarians say the restrictions stifle consumers' freedom of speech and undermine their fair use of products they've paid for.

### Reverse-Engineering Will Be Allowed For Interoperability

Another major change in **UCITA** is the addition of Section 118 that specifies the terms for reverse engineering. Whereas the previous version of **UCITA** prohibited any tampering with software, the new section allows consumers to study how a piece of software works so that it can be made compatible with other technologies — a process known as reverse engineering. This amendment came at the request of the **American Committee for Interoperable Systems** which comprises vendors such as **Sun Microsystems, Inc.** and **NCR Corp.** The committee fought for reverse engineering for the purposes of interoperability and obtained approval.

### Not Enough Changes

**UCITA** aims to make the rules for software contracts and license agreements more consistent and uniform for all fifty states. A uniform law would reduce potential confusion for both software vendors and customers and make buying and selling software much easier. The difficulty is coming up with a law that everyone can agree on. **UCITA** has a lot of opposition from businesses, library associations, and consumer groups. Academic library groups oppose a law intended to make software-licensing agreements uniformly enforceable in all 50 states because the changes to **UCITA**, though a step in the right direction, don't go far enough to protect scholars' interests.

A nine-member committee of the **American Bar Association** acknowledges that there is a need for a uniform law governing software licensing transactions; but it questions whether **UCITA** should be that legislation. The committee has several areas of concern. One deals with remote access. **UCITA**'s drafters want to prohibit it; but the ABA says there is still a loophole. Related to remote access are the terms of the license. With click-on or shrink-wrap licenses, end users often see the terms only after agreeing to the license. They should see them before payment.

Another area of concern involves the scope of **UCITA**. **UCITA** understands "computer information" to include everything from copyrighted expression, such as stories, computer programs, images, music, and Web pages to other traditional forms of intellectual property such as patents, trade secrets, and trademarks to newer digital creations such as online databases and interactive games. While **UCITA** claims to be limited to information in electronic form, it allows other transactions to "opt-in" to being governed by **UCITA**. Electronic commerce portals, computer hardware vendors, and maybe even automobile manufacturers could "opt-in" to **UCITA**'s provisions if they wish. There remains a question as to whether **UCITA** applies to goods that contain built-in software.

Consumer advocates are concerned that practices allowed by **UCITA** will spread quickly beyond the software industry. **UCITA** is so broad that it even includes mass-market licensing of electronic books which can be eventually extended to include printed books. It can even cover materials and information in the public domain, including those already protected by intellectual property law.

**UCITA**'s proponents hope the changes eliminate some of the opposition. However, several opponents say the modifications are not extensive enough. Instead of performing a major overhaul of **UCITA**, the **NCCUSL** has only applied patches. Patches to legislation, like patches to faulty software, do not solve the problems. They are temporary solutions that really do not benefit anyone in the long run.

Nonetheless, the **NCCUSL**, based in Chicago, intends to renew its efforts to obtain state-by-state adoption. A special committee of the **American Bar Association** that called for a major rewrite of **UCITA** last year probably will not support the revised version. The **American Library Association** and some software developers also oppose **UCITA** because it still gives vendors the ability to sell systems with secret back doors. **Carlyle Ring**, a former general counsel at **Atlantic Research Corp.** in Gainesville, Fla. and the head of the **UCITA** drafting committee, acknowledges that **UCITA** may undergo further changes; but any more modifications will have to wait until the next annual meeting of the **NCCUSL** next summer.

# Biz of Acq — Examining the Worth of Information

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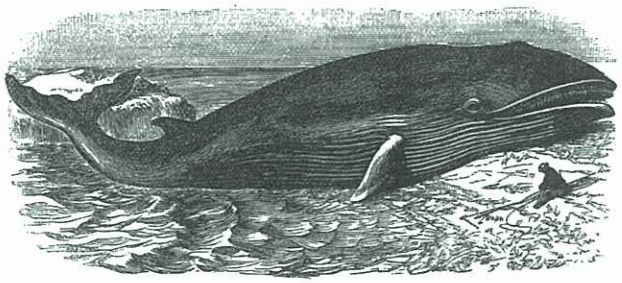
***Column Editor's Note:*** ***Audrey Fenner****, Acquisitions Librarian at the* ***University of North Carolina at Greensboro****, asks us to think about the actual value of the information that we buy and sell—not the price, but the real worth. Presumable price should be based on real worth or value, and we should have some idea of worth or value when determining how much we will charge or pay for something. However, when it comes to information, I suspect that librarians will pay whatever is being charged, and publishers will charge whatever they think librarians will pay, simply because it's usually almost impossible to determine the real worth or value of information.* ***Audrey*** *explains why.*



***Audrey's*** *article was previously published in the Spring 2002 issue of* ***Library Philosophy & Practice (http://www. uidaho.edu/~mbolin/lp&p.htm)*** *with the title "Placing Value on Information." —* ***MF***

**Abstract**

Society regards information as a commodity and the possession of it as an asset. Economists would like to account for information in the same way as physical assets but no discipline has given us an accepted model for such treatment. Disciplines regard information differently, and it is more difficult to develop systems to measure information than physical commodities. The price system has been used to assign value to information, but does it provide the best means? Can librarians plan for the future, justifying increasing expenditures to their funding agencies, in the

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absence of a meaningful information measurement scheme?

### What is information worth?

Information has become an element of commerce. In earlier times, success was based on such criteria as control of finance, physical resources, writing, food, fire or shelter. Today, successful people and businesses are those who control information: its development, access, analysis and presentation. We refer to our era as the "Information Age." We buy and sell information, sometimes with money and sometimes by trading it for other information. Information, as an element of commerce, is a commodity, yet there are no cogent, universally accepted accounting or economic theories of information.

There are various frameworks in which we try to view and define information, various attempts to measure it, decide what kind of value it has, and determine how much it is worth. For example, disciplines such as economics, accounting, sociology and behavioral science regard information in very different ways. Economists define information as phenomena that reduce uncertainty, and measure it in terms of exchange rates based on supply and demand. Accountants think of costs and benefits (debits and credits), while sociologists concern themselves with the net public good of information. Behaviorists study cognitive and behavioral change brought about by information. Clearly, placing value on information is not a straightforward, single-step process.

Information passes through many stages before it has value to anyone. It exists first in a latent state, waiting for the right paradigm or perspective, long before anyone recognizes it to be information. Then we realize that raw, unorganized data may be of some use. We collect it, organize it, analyze it and draw conclusions from it. Both the information and our conclusions can be communicated. Only when information has been comprehended, can we value it and respond to it.

A determination of the actual value of information can be made only at this final stage. Information has no value in itself; its value is derived from its understanding and subsequent application. Before this last stage we can do no more than estimate the value we expect it to have. Society values only the product, or result, of information.

### Information as commodity

Business regards information as a commodity and the possession of it as an asset. Economists would like to treat and account for information in the same way as physical assets. However, no discipline has given us an accepted model for such treatment although analogies abound.

Information can, to some extent, be valued and costed in the same way as the other assets of organizations, and included in their financial reports. As inventory, information goes through the value-added stages of raw material (events or processes to be measured), work-in-progress (information in development), and finished goods (marketable information). Information gathering and presentation require capital investment and human labor. Besides being costly to acquire, information incurs management costs. Like physical assets, information faces quality control inspection before it can be distributed. Information is subject to just-in-time requirements, just like physical inventory. Left on its own, its value may depreciate over time.

At each stage or level of information, there are specialized vendors and customers. Seekers of information may overpay and providers of information may undercharge because they do not differentiate among levels and varieties of information transactions. This is due to problems in identification and measurement of information.

### Information and the price system

**Joseph Stiglitz** refers to the belief of early twentieth century economists that the decentralized price system led to the efficient allocation of resources. "It was hoped," says **Stiglitz**, that "the same kinds of tools that had provided insights into other branches of economics would work in the 'economics of information.'" In fact, to **Stiglitz** the price system is not a satisfactory model for the economy since it does not acknowledge "problems of information," the ways in which information differs from physical commodities.[1]

**John Perry Barlow**, referring to "information commerce," sketched an outline of the non-monetary ways that society assigns value to information. Generally, **Barlow** says, information increases in value as it becomes more familiar, unlike physical goods that are more valuable if they are scarce. Sometimes scarcity does increase the value of information as when, for example, the possessor of a secret profits from knowing it. In these instances, timing is as much the determinant of value as is the information itself. The person who is closest to the information at the time it is produced is the one who benefits from implementing it. The information becomes less valuable, less relevant, as the interval between its formation and its use increases. **Barlow** also points out that the value we place on information is affected by the reputation or point of view of the provider. We value the opinions of people recognized as experts, and those people sell us their way of perceiving the world at the same time as they provide us with information.[2]

It is very difficult to measure the value of information according to the price system because its characteristics make it both like and unlike physical inventory:

- Information is not necessarily a product of manufacturing.
- Information can often be produced at little or no cost.
- Each item of information is different from every other. If it is not different, it is not new information. The same product can be bought repeatedly from the same store, but information once provided or "sold" cannot be "bought" again since the "buyer" already knows it.[3]
- Information may be exchanged, but exchange is not necessary. Receiving information can be an entirely individual, personal experience, and information can be received when a person is in contact with a non-human environment only.
- Information is not necessarily scarce, though well-analyzed, well presented, and well-disseminated information is not always available.
- Information is non-rivalrous. It can be consumed by one person and still be provided to others at no additional cost.
- Information can have multiple effects, both positive and negative, often at the same time.
- Information can be both stabilizing and destabilizing, often at the same time, for different subjects.
- Information may be available yet not be provided where it is needed, and information provided is not always used effectively.
- There is no such thing as perfect information, which would be the presence and effective use of all existing, applicable, necessary knowledge.
- Information may be either subjective or objective, or both at the same time.
- Unlike materials objects that either exist or do not exist, information can exist in part.
- Information may be totally false or true, partially false or true, or neither false nor true.
- Information is both a public good and a private commodity. One person's consumption of information does not necessarily reduce the amount available to others, its cost, or its value.
- Information, unlike objects, cannot exist apart from value.

### The librarian's view of information

Librarians view themselves as information professionals. How do they view information? In the past, librarians have busied themselves most with the communication or transmittal stage of the information process. The collecting and organizing of information are done by others: writers, artists, and publishers, for example. Librarians present this gathered content and make it available. This is the mission of the library profession, and carrying out this mission keeps librarians from being scholars. While a librarian must be aware of content, knowing what it is and where to find it, his or her chief concern is with the presentation of content, not with its production.

At present librarians are keenly interested in the format in which information appears, and with its means of presentation. Many library conferences and journal articles focus on the characteristics of print versus electronic formats, or discuss commercial enterprises such as content mediators that librarians fear may encroach on territory they consider their own.

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In the literature of library science there is much discussion of value-added information services. Both librarians and their clients have become concerned about the glut of information, asking how to eliminate needless and worthless data in the search for appropriate content. For library users, there are very real barriers to accessing, analyzing, and applying information, and librarians add value to information whenever they reduce the barriers to it. Value is added in easing the finding of the most appropriate, complete source of information, and in easing connections with information. Value is also added in easing the analysis and processing of information, and in facilitating its application. Consultants of all sorts know this well, and it is plain to see how much value our society places on providing hand-holding and turn-key solutions.

For all their concern with providing information access, giving good service to users, and adding value, librarians are hampered by the fact that information cannot yet be quantified and valued in any measurable way. Each element of information-handling requires its own accounting: acquiring information, presenting information, analyzing information, and so on. What is the relationship between the expense incurred in collecting information and the value of that information? This is a troublesome question for librarians. They must plan for the future, justifying increasing expenditures to their funding agencies, in the absence of a meaningful scheme to measure the value of information.

### New metaphors for information

**Stiglitz** cites his 1976 and 1980 marketing studies done with **Sanford J. Grossman**. These studies showed that "if information is costly, there must be an equilibrium amount of disequilibrium—persistent discrepancies between prices and 'fundamental values' that provide incentives for individuals to obtain information." Stiglitz and Grossman concluded that "the only information that could be efficiently distributed was costless information."[4]

Does **Stiglitz**' reference to "costless information" imply that it is neither necessary nor possible to quantify information in terms of currency? Information is only one of many non-physical, non-material things we value. Do we need to measure it in dollar terms any more than we need to measure satisfaction that way, or self-expression, or self-fulfillment?

In the past, society's attempts to assign a dollar value to information and knowledge have had very uneven results. In academic life, a scholar's reputation depends on the perceived value of the knowledge she or he possesses. Society pays professionals such as doctors and lawyers highly for their expertise. Yet the stereotype of the impoverished artist or musician is based on a failure of the currency model when it comes to valuing ideas. At what stage or level do ideas and information become truly valuable to us? Is the satisfaction of merely possessing information sufficient in itself? Has the information economy become so fundamental to business and to our way of life that we must find a way to equate ideas with cash? Or, is an upheaval in our value system implied here, a need for a new foundation for commerce?

Librarians have long recognized the interrelated nature of knowledge, the many ways in which information produced in one discipline is integrated into another. Rather than finding analogies for valuing information in the fields of business, economics and accounting, information scientists could shape metaphors from other models. For example, information could be compared with the processes of metabolism:

- Information is always in circulation. It acts as the medium of exchange, the content of exchange, and the valuing mechanism of the exchange.
- Contradictions are evidence of being out of a stable state of equilibrium. They occur when the circulation of information is blocked.
- Information is disseminated, absorbed, and used in a way that can be likened to an organism's use of nutrients.
- Just as most chemical alterations occur at a cellular level, integration of information can take place only as an individual phenomenon.
- Information is integrated or comprehended at discrete levels, in a stepwise progression, just as energy levels within the molecule progress from lower energy to higher energy in discrete stages.
- Information is an inherent property of structure. Some information is stabilizing while some is destabilizing. Some destabilization is necessary to arrive at higher levels of integration and complexity.
- Higher levels of information, meaning greater integration of information, bring greater power, longer periods of stability, and wider vistas of understanding.

Money is a means of exchange, a way of measuring needs and wants, status and social expectations, scarcity and satiety, quantity and quality, usefulness and satisfaction, and so forth. However, the price system is an aggregate system. We cannot easily determine value at the individual level. It is obvious that price is rarely equivalent to intrinsic value. Perhaps value is, at root, a metaphysical construct. Is money the best surrogate for value? Could information itself better represent value? Information is a larger and more inclusive concept than money. Could information become the currency of a new barter system, a true information economy?

**Endnotes**

1. Joseph E. Stiglitz, "The Contributions of the Economics of Information to Twentieth Century Economics," *Quarterly Journal of Economics* 115 (Nov. 2000): 1441-1478.
2. John Perry Barlow, "The Economy of Ideas," *Wired* 2 (March 1994): 84-90, 126-129. Available: *http://www.wired.com/wired/archive/2.03/economy.ideas.html* (13 February 2002).
3. Stiglitz, *Contributions of the Economics of Information*, p. 1449.
4. Ibid, p. 1460.

# And They Were There

## Reports of Meetings — ALCTS, InfoToday 2002, and MLA In Dallas

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***ALCTS Acquisitions Librarians/Vendors of Library Materials Discussion Group,*** Atlanta, Georgia, June 13, 2002

Report by **Janet L. Flowers** (University of North Carolina at Chapel Hill) <Janet_Flowers@unc.edu>

The **ALCTS Acquisitions Librarians/Vendors of Library Materials Discussion Group** had a lively review of the changing landscape at their annual meeting in Atlanta on June 13th, 2002. Three panelists presented their views on a series of ten questions with audience participation between each question. The panelists were **Ann-Marie Breaux** from **YBP**, **Colin Harrison** from **Everetts**, and **Forrest Link** from **Midwest Library Services**. As the moderator, I took notes on the very interesting and thoughtful comments that were made and share them here so others can reflect upon the issues raised. However, to make my task easier and to protect from issues of liability, I am not going to attempt to attribute the comments but merely summarize them.

The audience was asked to consider these questions as the panelists made their comments. The audience was invited to speak after comments on each question. Do you agree or disagree with the speakers' comments on this question? Why or why not? What has been your

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